

a preferred embodiment of the invention the designated timeslot interval may be the same for all Node Bs. In a preferred embodiment of the invention the pattern of timeslots for co-ordination i.e. OTAC message TX/RX are a function of the system frame number (SFN). The system frame number is a counter that is running in each cell, and simply counts the number of frames elapsed. This number is increased every time a frame has elapsed (10 ms in LTE). The value of the SFN is used for defining the discontinuous reception patterns (DRX) for instance. In general, this SFN is used for any operation that requires timed operation (like paging).

[0039] The invention is not limited to this scheme but other alternatives for providing inter-Node B synchronisation of OTAC ‘openings’ are provided by the invention. In one embodiment the timeslots/intervals between them are based on GPS based timing. In another embodiment the timeslots/intervals between them are based on home Node Bs monitoring and adopting to the patterns of neighbouring Node Bs. If a Node B has no OTAC messages to transmit, then it listens to potential OTAC messages coming from other Node Bs, and try to decode those if such messages are sent.

[0040] In one embodiment, if a Node B has an OTAC to be transmitted, then it may transmit the OTAC message in the first coming timeslot, instead of listening to OTAC messages. In another embodiment there may be multiple OTAC resources

[0041] In one embodiment, the OTAC message is retransmitted after N OTAC time-slot periods, where N is a (pseudo) randomized integer, that is different from each Node B. N may be picked randomly from a set of possible values, or it may be selected as a function of the cell ID (i.e. in that case the value of N will be different for cells that are in the same close vicinity).

[0042] The reason for sending the same OTAC message twice or more times at different time-instances, is that some Node Bs may miss reception of such an OTAC message, if at the same time transmitting own OTAC message. With randomized transmission of always retransmitting each OTAC message, the probability of this happening is significantly reduced.

[0043] The requirements for OTAC messages in embodiments of the invention is so such messages are sent with a low frequency from Node Bs, i.e. in the order of every five to tens (on event basis). A periodicity of 100 ms (or more) of the time intervals for sending/receiving OTAC messages is considered to be sufficient.

[0044] The invention is implemented in one embodiment of the invention at the Node Bs only, and does not require any direct changes or support from terminals. However, specifications in certain embodiments are updated in order to allow timing for implicit channels to reflect the missing Node B transmission times (to handle missing/delayed Ack/Nack for UL data channels). The advantage of the invention is that it is fairly simple to implement and provides sufficiently good performance.

[0045] The embodiments of this invention may be implemented by computer software executable by a data processor of the mobile device, such as in the processor entity, or by hardware, or by a combination of software and hardware. Further in this regard it should be noted that any blocks of the logic flow as in the figures may represent program steps, or interconnected logic circuits, blocks and functions, or a combination of program steps and logic circuits, blocks and functions.

[0046] The foregoing description has provided by way of exemplary and non-limiting examples a full and informative description of the exemplary embodiment of this invention. However, various modifications and adaptations may become apparent to those skilled in the relevant arts in view of the foregoing description, when read in conjunction with the accompanying drawings and the appended claims. However, all such and similar modifications of the teachings of this invention will still fall within the scope of this invention as defined in the appended claims.

1-34. (canceled)

35. A method of co-ordinating communication between a plurality of base stations in a communication system, comprising

at least one of designating and synchronising timeslots where said base stations receive and/or transit information to each other; and

listening by a base station while not transmitting, to potential messages coming from other base stations, wherein the timeslots are based on monitoring and adapting to time slot patterns of neighbouring base stations.

36. A method as claimed in claim 35 wherein said information pertains to co-ordination of said base stations.

37. A method as claimed in claim 35, wherein said information are over-the-air communication (OTAC) messages.

38. A method as claimed in claim 35, wherein said base stations are part of a cellular communication network.

39. A method as claimed in claim 38, wherein the cellular communication network is an autonomous network.

40. A method as claimed in claim 35, wherein said timeslots are regularly spaced.

41. A method as claimed in claim 35, wherein the timeslots are a function of system frame number (SFN).

42. A method as claimed in claim 35, wherein if a base station has a co-ordination message to be transmitted, transmitting the information in a first coming timeslot.

43. A method as claimed in claim 42, wherein the information is retransmitted automatically.

44. A method of co-ordinating communication between a plurality of base stations in a communication system, comprising

at least one of designating and synchronising timeslots where said base stations receive and/or transmit information to each other,

wherein the information is retransmitted after N timeslots periods, where N is an integer and is different from and varies between different base stations.

45. A method as claimed in claim 44, wherein the information is retransmitted after N timeslots periods wherein N is based on base station ID.

46. A base station comprising:

at least one antenna for wireless communication, and a data processing entity connected with a memory that stores computer software,

where execution of the computer software by the data processing entity results in the base station being configured to receive and/or transmit information to or from one or more other base stations during at least one of designated and synchronised timeslots; and

to listen to messages from other base stations while the base station is not transmitting, wherein the timeslots are based on monitoring and adapting to time slot patterns of neighbouring base stations.